

CONTAINS NO CBI

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OTS CONTROL
OFFICE

90-890000 474



000622702J

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Comprehensive Assessment Information Rule
REPORTING FORM

When completed, send this form to:

Document Processing Center
Office of Toxic Substances, TS-790
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attention: CAIR Reporting Office

For Agency Use Only:

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Control Number: _____

Docket Number: _____

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [1] [2] [2] [2] [8] [8]
CBI mo. day year

a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. [0] [2] [6] [4] [7] [1]-[6] [2]-[5]

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule NA

(ii) Name of mixture as listed in the rule

(iii) Trade name as listed in the rule

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule NA

CAS No. of chemical substance [] [] [] [] [] []-[] []-[]

Name of chemical substance

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI Manufacturer 1

Importer 2

Processor ③

X/P manufacturer reporting for customer who is a processor 4

X/P processor reporting for customer who is a processor 5

Mark (X) this box if you attach a continuation sheet.

1.03 Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?

CBI

- Yes [X] Go to question 1.04
- No [] Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.

CBI

- Yes 1
- No ②

b. Check the appropriate box below:

- You have chosen to notify your customers of their reporting obligations
Provide the trade name(s) _____
- You have chosen to report for your customers
- You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.

CBI

- Trade name Lupranate T80-Type 1
- Is the trade name product a mixture? Circle the appropriate response.
- Yes 1
- No ②

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI

"I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

Philip Birk		7/5/89
NAME	SIGNATURE	DATE SIGNED
Pour Plant Manager	(312) 293-0780	
TITLE	TELEPHONE NO.	

Mark (X) this box if you attach a continuation sheet.

1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

CBI
 "I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."
 NA

_____	_____	_____
NAME	SIGNATURE	DATE SIGNED
_____	(_____)	_____
TITLE	TELEPHONE NO.	DATE OF PREVIOUS SUBMISSION

1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI
 "My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."
 NA

_____	_____	_____
NAME	SIGNATURE	DATE SIGNED
_____	(_____)	_____
TITLE	TELEPHONE NO.	

Mark (X) this box if you attach a continuation sheet.

PART B CORPORATE DATA

1.09 Facility Identification

CBI Name [N]0[-]S]A]G]P]R]O]D]U]C]T]S]C]O]R]P].
 Address [1]8]5]0]W]E]S]T]D]O]W]N]S]D]R]I]V]E]
Street
[W]E]S]T]C]H]I]C]A]G]O],
City
[1]L] [6]0]1]8]5]--[1]8]0]3]
State Zip

Dun & Bradstreet Number[0]5]-[2]0]3]-[2]0]5]9]
EPA ID NumberLP.[0]7]2]3]4]9]7]3]1]
Employer ID Number[1]9]8]5]2]7]5]4]
Primary Standard Industrial Classification (SIC) Code[3]0]8]6]
Other SIC Code
Other SIC Code

1.10 Company Headquarters Identification

CBI Name [L]S]I]H]O]L]D]I]N]G]S]C]O]R]P].
 Address
Street
City
State Zip

Dun & Bradstreet Number[1]8]-[6]7]0]-[4]5]9]9]
Employer ID Number[1]9]8]5]2]7]5]4]

Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI
Classification Quantity (kg/yr)

<input type="checkbox"/>	Manufactured	NA
	Imported	NA
	Processed (include quantity repackaged)	902,990
Of that quantity manufactured or imported, report that quantity:		
	In storage at the beginning of the reporting year	NA
	For on-site use or processing	NA
	For direct commercial distribution (including export)	NA
	In storage at the end of the reporting year	NA
Of that quantity processed, report that quantity:		
	In storage at the beginning of the reporting year	136,950
	Processed as a reactant (chemical producer)	NA
	Processed as a formulation component (mixture producer)	NA
	Processed as an article component (article producer)	1,010,140
	Repackaged (including export)	NA
	In storage at the end of the reporting year	88,590

Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

<input type="checkbox"/>	Year ending	[0] [6]	[8] [7]
		Mo.	Year
	Quantity manufactured	NA	kg
	Quantity imported	NA	kg
	Quantity processed	1,010,140	kg
	Year ending	[0] [6]	[8] [6]
		Mo.	Year
	Quantity manufactured	NA	kg
	Quantity imported	NA	kg
	Quantity processed	883,240	kg
	Year ending	[0] [6]	[8] [5]
		Mo.	Year
	Quantity manufactured	NA	kg
	Quantity imported	NA	kg
	Quantity processed	952,443	kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

- Continuous process 1
- Semicontinuous process 2
- Batch process 3

Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

- Continuous process 1
Semicontinuous process (2)
Batch process 3

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

- Manufacturing capacity UK kg/yr
Processing capacity kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

<input type="checkbox"/>	Manufacturing Quantity (kg)	Importing Quantity (kg)	Processing Quantity (kg)
Amount of increase	_____	_____	NA
Amount of decrease	_____	_____	NA

Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

CBI

	<u>Days/Year</u>	<u>Average Hours/Day</u>
Process Type #1 (The process type involving the largest quantity of the listed substance.)		
Manufactured	<u>NA</u>	<u>NA</u>
Processed	<u>215</u>	<u>1.33</u>
Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)		
Manufactured	<u>NA</u>	<u>NA</u>
Processed	<u>NA</u>	<u>NA</u>
Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)		
Manufactured	<u>NA</u>	<u>NA</u>
Processed	<u>NA</u>	<u>NA</u>

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

Maximum daily inventory kg
 Average monthly inventory kg

Mark (X) this box if you attach a continuation sheet.

2.11 Related Product Types -- List any Byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

CBI

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity¹</u>	<u>Concentration (%) (specify ± % precision)</u>	<u>Source of By-products, Coproducts, or Impurities</u>
NA				

¹Use the following codes to designate byproduct, coproduct, or impurity:

- B = Byproduct
- C = Coproduct
- I = Impurity

Mark (X) this box if you attach a continuation sheet.

2.12 Existing Product Types -- List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

a. Product Types ¹	b. % of Quantity Manufactured, Imported, or Processed	c. % of Quantity Used Captively On-Site	d. Type of End-Users ²
B	100	100	NA

¹Use the following codes to designate product types:

- | | |
|--|---|
| A = Solvent | L = Moldable/Castable/Rubber and additives |
| B = Synthetic reactant | M = Plasticizer |
| C = Catalyst/Initiator/Accelerator/
Sensitizer | N = Dye/Pigment/Colorant/Ink and additives |
| D = Inhibitor/Stabilizer/Scavenger/
Antioxidant | O = Photographic/Reprographic chemical
and additives |
| E = Analytical reagent | P = Electrodeposition/Plating chemicals |
| F = Chelator/Coagulant/Sequestrant | Q = Fuel and fuel additives |
| G = Cleanser/Detergent/Degreaser | R = Explosive chemicals and additives |
| H = Lubricant/Friction modifier/Antiwear
agent | S = Fragrance/Flavor chemicals |
| I = Surfactant/Emulsifier | T = Pollution control chemicals |
| J = Flame retardant | U = Functional fluids and additives |
| K = Coating/Binder/Adhesive and additives | V = Metal alloy and additives |
| | W = Rheological modifier |
| | X = Other (specify) _____ |

²Use the following codes to designate the type of end-users:

- | | |
|-----------------|---------------------------|
| I = Industrial | CS = Consumer |
| CM = Commercial | H = Other (specify) _____ |

Mark (X) this box if you attach a continuation sheet.

2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
B	100	100	NA

¹Use the following codes to designate product types:

- | | |
|--|---|
| A = Solvent | L = Moldable/Castable/Rubber and additives |
| B = Synthetic reactant | M = Plasticizer |
| C = Catalyst/Initiator/Accelerator/
Sensitizer | N = Dye/Pigment/Colorant/Ink and additives |
| D = Inhibitor/Stabilizer/Scavenger/
Antioxidant | O = Photographic/Reprographic chemical
and additives |
| E = Analytical reagent | P = Electrodeposition/Plating chemicals |
| F = Chelator/Coagulant/Sequestrant | Q = Fuel and fuel additives |
| G = Cleanser/Detergent/Degreaser | R = Explosive chemicals and additives |
| H = Lubricant/Friction modifier/Antiwear
agent | S = Fragrance/Flavor chemicals |
| I = Surfactant/Emulsifier | T = Pollution control chemicals |
| J = Flame retardant | U = Functional fluids and additives |
| K = Coating/Binder/Adhesive and additives | V = Metal alloy and additives |
| | W = Rheological modifier |
| | X = Other (specify) _____ |

²Use the following codes to designate the type of end-users:

- | | |
|-----------------|---------------------------|
| I = Industrial | CS = Consumer |
| CM = Commercial | H = Other (specify) _____ |

Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

a.	b.	c.	d.
Product Type ¹	Final Product's Physical Form ²	Average % Composition of Listed Substance in Final Product	Type of End-Users ³
NA			

¹Use the following codes to designate product types:

- | | |
|--|--|
| A = Solvent | L = Moldable/Castable/Rubber and additives |
| B = Synthetic reactant | M = Plasticizer |
| C = Catalyst/Initiator/Accelerator/Sensitizer | N = Dye/Pigment/Colorant/Ink and additives |
| D = Inhibitor/Stabilizer/Scavenger/Antioxidant | O = Photographic/Reprographic chemical and additives |
| E = Analytical reagent | P = Electrodeposition/Plating chemicals |
| F = Chelator/Coagulant/Sequestrant | Q = Fuel and fuel additives |
| G = Cleanser/Detergent/Degreaser | R = Explosive chemicals and additives |
| H = Lubricant/Friction modifier/Antiwear agent | S = Fragrance/Flavor chemicals |
| I = Surfactant/Emulsifier | T = Pollution control chemicals |
| J = Flame retardant | U = Functional fluids and additives |
| K = Coating/Binder/Adhesive and additives | V = Metal alloy and additives |
| | W = Rheological modifier |
| | X = Other (specify) _____ |

²Use the following codes to designate the final product's physical form:

- | | |
|----------------------|---------------------------|
| A = Gas | F2 = Crystalline solid |
| B = Liquid | F3 = Granules |
| C = Aqueous solution | F4 = Other solid |
| D = Paste | G = Gel |
| E = Slurry | H = Other (specify) _____ |
| F1 = Powder | |

³Use the following codes to designate the type of end-users:

- | | |
|-----------------|---------------------------|
| I = Industrial | CS = Consumer |
| CM = Commercial | H = Other (specify) _____ |

Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers.

- Truck 1
- Railcar 2
- Barge, Vessel 3
- Pipeline 4
- Plane 5
- Other (specify) _____ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers
or prepared by your customers during the reporting year for use under each category
CBI of end use listed (i-iv).

Category of End Use

i. Industrial Products

Chemical or mixture _____ kg/yr

Article _____ kg/yr

ii. Commercial Products

Chemical or mixture _____ kg/yr

Article _____ kg/yr

iii. Consumer Products

Chemical or mixture _____ kg/yr

Article _____ kg/yr

iv. Other

Distribution (excluding export) _____ kg/yr

Export _____ kg/yr

Quantity of substance consumed as reactant _____ kg/yr

Unknown customer uses _____ kg/yr

Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases.
CBI The average price is the market value of the product that was traded for the listed substance.

<u>Source of Supply</u>	<u>Quantity (kg)</u>	<u>Average Price (\$/kg)</u>
The listed substance was manufactured on-site.	NA	NA
The listed substance was transferred from a different company site.	NA	NA
The listed substance was purchased directly from a manufacturer or importer.	902,990	2.42
The listed substance was purchased from a distributor or repackager.	NA	NA
The listed substance was purchased from a mixture producer.	NA	NA

3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

CBI

- Truck (1)
- Railcar (2)
- Barge, Vessel 3
- Pipeline 4
- Plane 5
- Other (specify) _____ 6

Mark (X) this box if you attach a continuation sheet.

3.03 a. Circle all applicable containers used to transport the listed substance to your facility.
CBI

- Bags 1
- Boxes 2
- Free standing tank cylinders 3
- Tank rail cars (4)
- Hopper cars 5
- Tank trucks (6)
- Hopper trucks 7
- Drums 8
- Pipeline 9
- Other (specify) _____10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders	_____	mmHg
Tank rail cars	<u>260</u>	mmHg
Tank trucks	<u>260</u>	mmHg

Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify \pm % precision)</u>	<u>Amount Processed (kg/yr)</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify \pm % precision)
Class I chemical	902,990	100+0-.1
Class II chemical	NA	
Polymer	NA	

Mark (X) this box if you attach a continuation sheet.

4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

- NA Yes 1
 No ②

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	③	4	5
Store	1	2	③	4	5
Dispose	1	2	3	4	5
Transport	1	2	3	4	5

Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥ 10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI

<u>Physical State</u>		<u>Manufacture</u>	<u>Import</u>	<u>Process</u>	<u>Store</u>	<u>Dispose</u>	<u>Transport</u>
Dust	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Powder	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Fiber	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA
Aerosol	<1 micron	NA	NA	NA	NA	NA	NA
	1 to <5 microns	NA	NA	NA	NA	NA	NA
	5 to <10 microns	NA	NA	NA	NA	NA	NA

Mark (X) this box if you attach a continuation sheet.

SECTION 5 ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS

UK

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) _____ (1/M cm) at _____ nm

Reaction quantum yield, ϕ _____ at _____ nm

Direct photolysis rate constant, k_p , at ... _____ 1/hr _____ latitude

b. Oxidation constants at 25°C:

For 1O_2 (singlet oxygen), k_{ox} _____ 1/M hr

For RO_2 (peroxy radical), k_{ox} _____ 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... _____ mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b ... _____ 1/hr

Specify culture _____

e. Hydrolysis rate constants:

For base-promoted process, k_B _____ 1/M hr

For acid-promoted process, k_A _____ 1/M hr

For neutral process, k_N _____ 1/hr

f. Chemical reduction rate (specify conditions) _____

g. Other (such as spontaneous degradation) ... _____

Mark (X) this box if you attach a continuation sheet.

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	<u>Half-life (specify units)</u>
Groundwater	_____
Atmosphere	_____
Surface water	_____
Soil	_____

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
_____	_____	_____	in _____
_____	_____	_____	in _____
_____	_____	_____	in _____
_____	_____	_____	in _____

5.03 Specify the octanol-water partition coefficient, K_{ow} ... _____ at 25°C
 Method of calculation or determination _____

5.04 Specify the soil-water partition coefficient, K_d _____ at 25°C
 Soil type _____

5.05 Specify the organic carbon-water partition coefficient, K_{oc} _____ at 25°C

5.06 Specify the Henry's Law Constant, H atm-m³/mole

Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

<u>Bioconcentration Factor</u>	<u>Species</u>	<u>Test</u> ¹
_____	_____	_____
_____	_____	_____
_____	_____	_____

¹Use the following codes to designate the type of test:

F = Flowthrough

S = Static

UK

 Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of CBI the listed substance sold or transferred in bulk during the reporting year.

<u>Market</u>	<u>Quantity Sold or Transferred (kg/yr)</u>	<u>Total Sales Value (\$/yr)</u>
Retail sales	_____	_____
Distribution -- Wholesalers	_____	_____
Distribution -- Retailers	_____	_____
Intra-company transfer	_____	_____
Repackagers	_____	_____
Mixture producers	_____	_____
Article producers	_____	_____
Other chemical manufacturers or processors	_____	_____
Exporters	_____	_____
Other (specify) _____	_____	_____

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use in your current operation, and which results in a final product with comparable performance in its end uses.

CBI

<u>Substitute</u>	<u>Cost (\$/kg)</u>
None	_____
_____	_____
_____	_____

Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions:

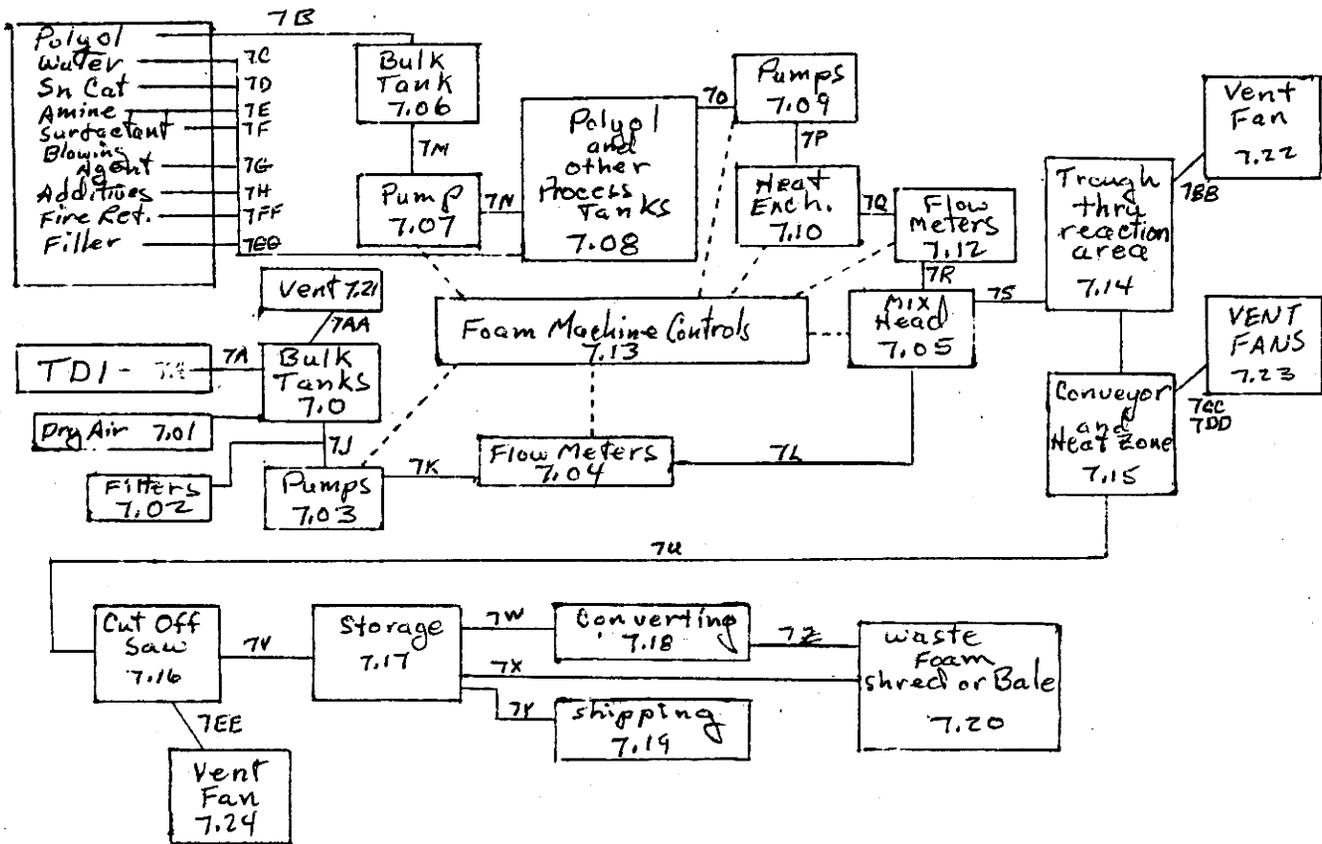
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

Process type Flexible Polyurethane Foam Slabstock Manufacturing

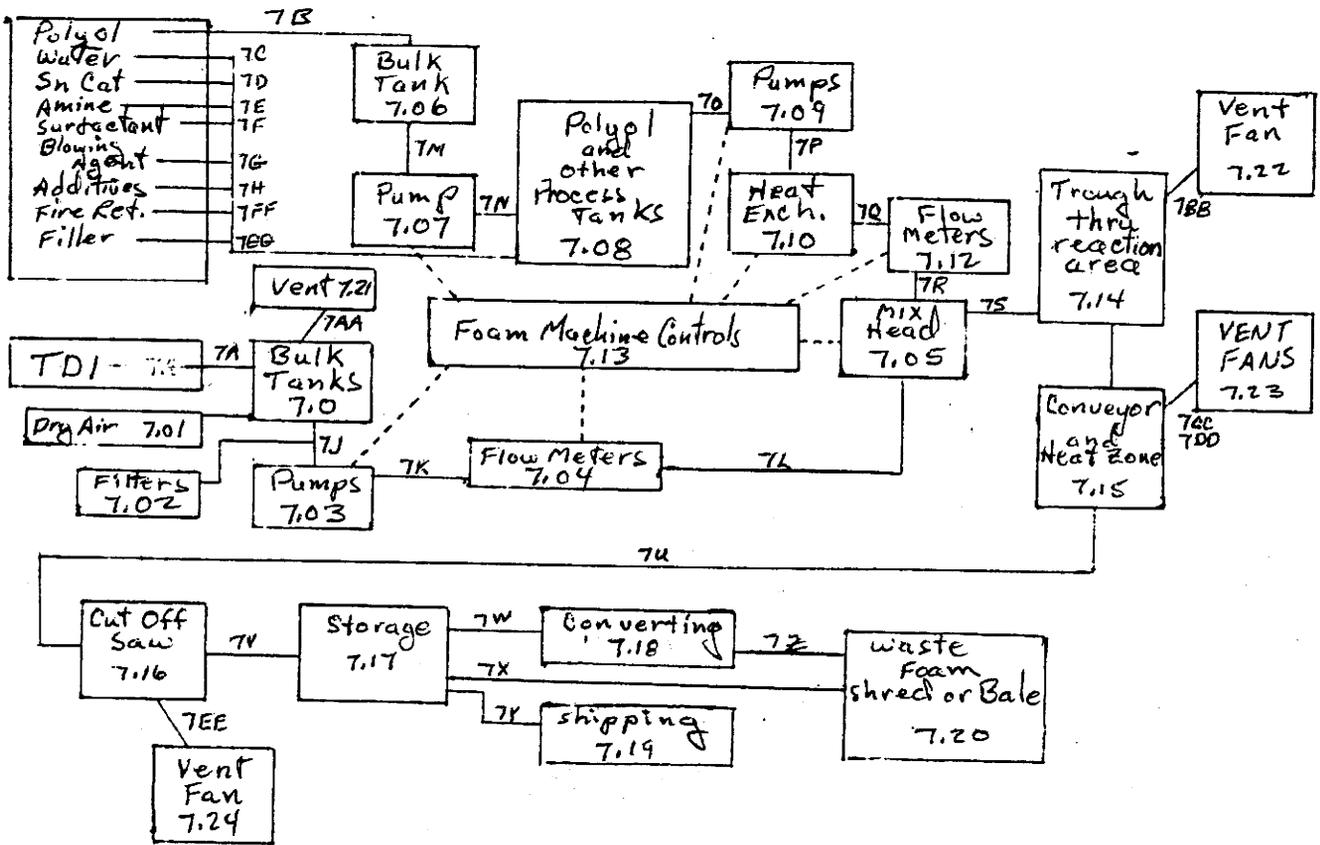


Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all facility emissions if not treated before emission into the environment. If all such emissions are released from one process type, provide a process block flow diagram using the instructions for question 7.01. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

Process type Flexible Polyurethane Foam Slabstock Manufacturing



- 7.21 Bulk tank vent.
- 7.22 Trough & reaction area vent fan.
- 7.23 Conveyor & heat zone vent fans.
- 7.24 Cut off saw vent fan.

Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

Process type Flexible Polyurethane Foam Slabstock Manufacturing

<u>Unit Operation ID Number</u>	<u>Typical Equipment Type</u>	<u>Operating Temperature Range (°C)</u>	<u>Operating Pressure Range (mm Hg)</u>	<u>Vessel Composition</u>
7.0	3@22.7M liter tanks	20 [±] 3	-100+160	steel
7.01	refrigerant drier	5 ^o	160	NA
7.02	strainer basket	20 [±] 3	0-260	steel/steel
7.03	centrifugal, magnetic diaphragm, axial	20 [±] 3	1300+260 16000+5200	stainless steel, viton
7.04	turbine meter	20 [±] 3	16000 [±] 5200	steel
7.05	mix head	19 [±] 4	1300 [±] 700	steel
7.06	8@22.7M liter tanks	18 [±] 3	-10+160	steel
7.07	gear pump	18 [±] 3	2000	steel
7.08	16@ <760 liter tanks	15-30	0-520	steel
7.09	gear & piston	13-30	0-1600	steel
7.10	heat exchanger plate & frame	18-21	0-1600	stainless
7.11	heat exchanger tube in tube	13	0-2100	steel
7.12	slow meters	13-21	0-2100	glass tube
7.13	controls	ambient	NA	NA
7.14	trough thru reaction area	<100	atmospheric	steel
7.15	conveyor & heat zone	<100	atmospheric	steel
7.16	cut off saw	<100	atmospheric	NA
7.17	storage	ambient	NA	NA
7.18-7.20	converting, shipping	ambient	-100+160	NA
7.21	vent, breather	ambient	atmospheric	NA
7.22-7.24	vent fan	ambient	atmospheric	NA
7.25	vent	ambient	atmospheric	NA

Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

Process type Flexible Polyurethane Foam Slabstock Manufacturing

<u>Process Stream ID Code</u>	<u>Process Stream Description</u>	<u>Physical State¹</u>	<u>Stream Flow (kg/yr)</u>
<u>7A,7J,7K,7L</u>	<u>TDI</u>	<u>OL</u>	<u>902,990</u>
<u>7B,7M,7N,7O,7P,7Q,7R</u>	<u>Polyol</u>	<u>OL</u>	<u>1,863,260</u>
<u>7C,70,7Q,7R</u>	<u>Water</u>	<u>AL</u>	<u>51,690</u>
<u>7D,70,7Q,7R</u>	<u>Tin Catalyst</u>	<u>OL</u>	<u>8,210</u>
<u>7E,70,7Q,7R</u>	<u>Amine Catalyst</u>	<u>OL</u>	<u>6,680</u>
<u>7F,70,7Q,7R</u>	<u>Surfactant</u>	<u>OL</u>	<u>20,670</u>
<u>7G,70,7Q,7R</u>	<u>*Blowing Agents</u>	<u>OL</u>	<u>103,040</u>
<u>7H,70,7Q,7R</u>	<u>Additives</u>	<u>OL,SY</u>	<u>6,410</u>

¹Use the following codes to designate the physical state for each process stream:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

<u>7FF, 70, 7Q, 7R</u>	<u>Fire Retardants</u>	<u>OL</u>	<u>89,402</u>
<u>7GG, 70, 7Q, 7R</u>	<u>Fillers</u>	<u>SO</u>	<u>232,540</u>

*Includes Methylene Chloride Mix Head Flush
1b X .454 = kg

Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

Process type Flexible Polyurethane Foam Slabstock Machine

a.	b.	c.	d.	e.
Process Stream ID Code	Known Compounds ¹	Concentrations ^{2,3} (% or ppm)	Other Expected Compounds	Estimated Concentrations (% or ppm)
7A	TDI	99.9% (A) (W)	Hydrolyzable Chloride	.01%
7B	Polyol	100% (A) (W)	NA	NA
7C	Water	100% (E) (W)	NA	NA
7D	Tin Catalyst	50% (A) (W)	DOP	50%
7E	Amine Catalyst	41% (A) (W)	Polyol	59%
7F	Surfactant	100% (A) (W)	NA	NA
7G	*Blowing Agents	100% (A) (W)	7A-7GG	<1%
7H	Additives	NA	NA	NA
7FF	Fire Retardants	100% (A) (W)	NA	NA
7GG	Barium Sulfate	90% (E) (W)	SrSO ₄ /CaCO ₃	10%
	Calcium Carbonate	>95% (E) (W)	MgCO ₃ /SiO ₂	<5%

7.06 continued below

7S	TDI Polyol, Water Tin Amine, Surfactant Etc.	100% (E) (W)	NA	NA
7U	Urethane Foam	100% (E) (W)	NA	NA

*Indicates Methylene Chloride Mix Head Flush

Mark (X) this box if you attach a continuation sheet.

7.06 (continued)

¹For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1	Colorants (E) (W)	0.9%
	CAS # - NA	
2	Antistat (E) (W)	3.8%
	CAS #68308-67-8	
3		
4		
5		

²Use the following codes to designate how the concentration was determined:

- A = Analytical result
- E = Engineering judgement/calculation

³Use the following codes to designate how the concentration was measured:

- V = Volume
- W = Weight

Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

8.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

Process type _____

Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

¹Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

²Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)
GU = Gas (uncondensable at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

³For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

<u>Additive Package Number</u>	<u>Components of Additive Package</u>	<u>Concentrations (% or ppm)</u>
1		
2		
3		
4		
5		

⁴Use the following codes to designate how the concentration was determined:

- A = Analytical result
- E = Engineering judgement/calculation

8.05 continued below

Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

⁵Use the following codes to designate how the concentration was measured:

- V = Volume
- W = Weight

⁶Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

<u>Code</u>	<u>Method</u>	<u>Detection Limit</u> <u>(± ug/l)</u>
<u>1</u>	_____	_____
<u>2</u>	_____	_____
<u>3</u>	_____	_____
<u>4</u>	_____	_____
<u>5</u>	_____	_____
<u>6</u>	_____	_____

Mark (X) this box if you attach a continuation sheet.

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1
 No 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

Incinerator	Air Pollution Control Device ¹	Types of Emissions Data Available
1	N/A	N/A
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1
 No 2

¹Use the following codes to designate the air pollution control device:

- S = Scrubber (include type of scrubber in parenthesis)
- E = Electrostatic precipitator
- O = Other (specify) _____

Mark (X) this box if you attach a continuation sheet.

PART A EMPLOYMENT AND POTENTIAL EXPOSURE PROFILE

9.01 Mark (X) the appropriate column to indicate whether your company maintains records on the following data elements for hourly and salaried workers. Specify for each data element the year in which you began maintaining records and the number of years the records for that data element are maintained. (Refer to the instructions for further explanation and an example.)

CBI

<u>Data Element</u>	<u>Data are Maintained for:</u>		<u>Year in Which Data Collection Began</u>	<u>Number of Years Records Are Maintained</u>
	<u>Hourly Workers</u>	<u>Salaried Workers</u>		
Date of hire	X	X	1973	Perm.
Age at hire	X	X	1973	Perm.
Work history of individual before employment at your facility	X	X	1973	Perm.
Sex	X	X	1980	10
Race	X	X	1980	10
Job titles	X	X	1973	Perm.
Start date for each job title	X	X	1973	Perm.
End date for each job title	X	X	1973	Perm.
Work area industrial hygiene monitoring data	NA	NA	NA	NA
Personal employee monitoring data	X	NA	1984	20
Employee medical history	X	X	1984	20
Employee smoking history	NA	NA	NA	NA
Accident history	X	X	1973	Perm.
Retirement date	NA	NA	NA	NA
Termination date	X	X	1973	Perm.
Vital status of retirees	NA	NA	NA	NA
Cause of death data	NA	NA	NA	NA

Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

a.	b.	c.	d.	e.
<u>Activity</u>	<u>Process Category</u>	<u>Yearly Quantity (kg)</u>	<u>Total Workers</u>	<u>Total Worker-Hours</u>
Manufacture of the listed substance	Enclosed	NA	NA	NA
	Controlled Release	NA	NA	NA
	Open	NA	NA	NA
On-site use as reactant	Enclosed	NA	NA	NA
	Controlled Release	902990	121	33280
	Open	NA	NA	NA
On-site use as nonreactant	Enclosed	NA	NA	NA
	Controlled Release	NA	NA	NA
	Open	NA	NA	NA
On-site preparation of products	Enclosed	NA	NA	NA
	Controlled Release	NA	NA	NA
	Open	NA	NA	NA

Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

Labor Category

Descriptive Job Title

A Operator, Compounder

B Saw Operator

C Material Handler

D Foreman

E Lab Tech.

F Plant Mgr.

G

H

I

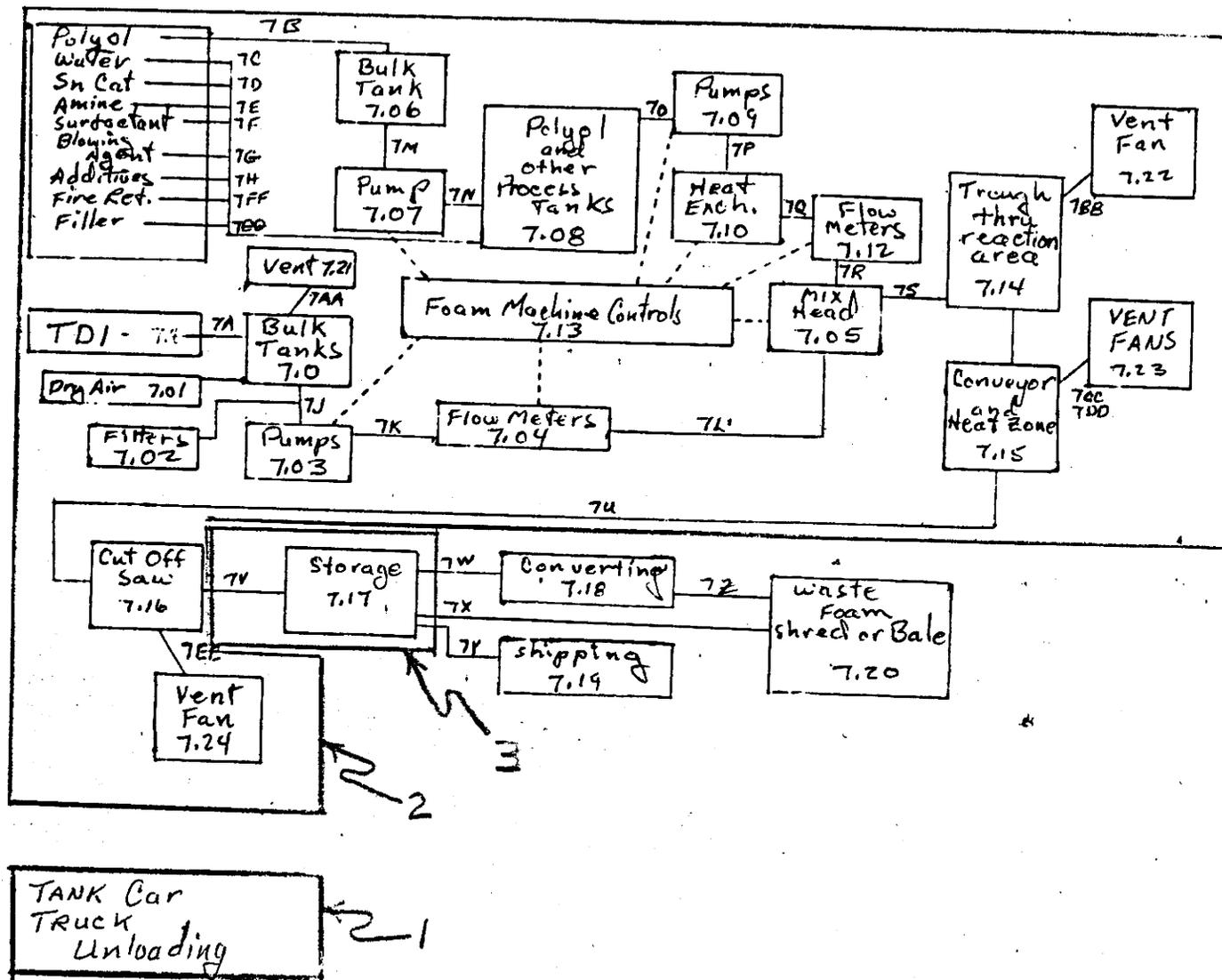
J

Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

Process type Flexible Polyurethane Foam Foam Slabstock Machine



Mark (X) this box if you attach a continuation sheet.

9.05 Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work Area ID

Description of Work Areas and Worker Activities

1	<u>Tank car, truck unloading</u>
2	<u>Pumping systems, mix head</u>
3	<u>Foam handling, cutoff saw</u>
4	<u>_____</u>
5	<u>_____</u>
6	<u>_____</u>
7	<u>_____</u>
8	<u>_____</u>
9	<u>_____</u>
10	<u>_____</u>

Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area -3-

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
B	1	inhalation	GU	C	215
C	10	inhalation	GU	C	215
D	1	inhalation	GU	B	215

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

- A = 15 minutes or less
- B = Greater than 15 minutes, but not exceeding 1 hour
- C = Greater than one hour, but not exceeding 2 hours
- D = Greater than 2 hours, but not exceeding 4 hours
- E = Greater than 4 hours, but not exceeding 8 hours
- F = Greater than 8 hours

Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

CBI

<u>Sample/Test</u>	<u>Work Area ID</u>	<u>Testing Frequency (per year)</u>	<u>Number of Samples (per test)</u>	<u>Who Samples¹</u>	<u>Analyzed In-House (Y/N)</u>	<u>Number of Years Records Maintained</u>
Personal breathing zone	2-3	4	1	D	Y	10
General work area (air)	2	continuous	continuous	D	Y	10
Wipe samples	NA	NA	NA	NA	NA	NA
Adhesive patches	NA	NA	NA	NA	NA	NA
Blood samples	1-3	1	3	E	N	30
Urine samples	NA	NA	NA	NA	NA	NA
Respiratory samples	1-3	1	3	E	N	30
Allergy tests	NA	NA	NA	NA	NA	NA
Other (specify)						
VISION	1-3	1	1	E	N	30
Other (specify)						
	NA	NA	NA	NA	NA	NA
Other (specify)						
	NA	NA	NA	NA	NA	NA

¹Use the following codes to designate who takes the monitoring samples:

- A = Plant industrial hygienist
- B = Insurance carrier
- C = OSHA consultant
- D = Other (specify) Lab Tech
- E = Clinic

Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample.

<input type="checkbox"/> Sample Type	Sampling and Analytical Methodology
Personal Breathing Zone	Chemically impregnated tape monitor recorder
General Work Area (air)	Chemically impregnated tape monitor

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

<input type="checkbox"/> Equipment Type ¹	Detection Limit ²	Manufacturer	Averaging Time (hr)	Model Number
D	.08A	MDA Scientific	2 hours	4000
E	.08A	MDA Scientific	24 hours	7001

¹Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) chemically impregnated tape

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) _____
- I = Other (specify) _____

²Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter (μ/m^3)

Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

Test Description

Frequency
(weekly, monthly, yearly, etc.)

Pulmonary, Chem screen, chest xray, eye

yearly

Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area trough & conveyor

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	<u>Y</u>	<u>1975</u>	<u>Y</u>	<u>1981</u>
General dilution	<u>NA</u>	<u></u>	<u></u>	<u></u>
Other (specify)	<u></u>	<u></u>	<u></u>	<u></u>
<hr/>				
Vessel emission controls	<u>N</u>	<u></u>	<u></u>	<u></u>
Mechanical loading or packaging equipment	<u>NA</u>	<u></u>	<u></u>	<u></u>
Other (specify)	<u></u>	<u></u>	<u></u>	<u></u>
<hr/>				

Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area ALL

<u>Equipment or Process Modification</u>	<u>Reduction in Worker Exposure Per Year (%)</u>
<u>NONE</u>	<u>NA</u>
_____	_____
_____	_____
_____	_____
_____	_____

Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine
 Work area Foam handling -3-

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>Y</u>
Safety goggles/glasses	<u>N</u>
Face shields	<u>N</u>
Coveralls	<u>N</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>N</u>
Other (specify)	
_____	_____
_____	_____

Mark (X) this box if you attach a continuation sheet.

9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

<u>Work Area</u>	<u>Respirator Type</u>	<u>Average Usage¹</u>	<u>Fit Tested (Y/N)</u>	<u>Type of Fit Test²</u>	<u>Frequency of Fit Tests (per year)</u>
<u>1,2,&3</u>	<u>Disposable neg. press. organic</u>	<u>A</u>	<u>Y</u>	<u>QL</u>	<u>2</u>
<u> </u>	<u>NIOSH/MSHA approved</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

¹Use the following codes to designate average usage:

- A = Daily
- B = Weekly
- C = Monthly
- D = Once a year
- E = Other (specify) _____

²Use the following codes to designate the type of fit test:

- QL = Qualitative
- QT = Quantitative

Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area -1-

Placarding, limited access, respiratory protection, eye protection, protective clothing, gloves, training program.

9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Flexible Polyurethane Foam Slabstock Machine

Work area -1-

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Vacuuming	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Water flushing of floors	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Other (specify)				
* _____	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

*not routine, would flush with neutralizer after control & containment.

Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes 1

No 2

Emergency exposure

Yes 1

No 2

If yes, where are copies of the plan maintained?

Routine exposure: _____

Emergency exposure: _____

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes ①

No 2

If yes, where are copies of the plan maintained? on site, Fire Dept, County, EPA

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

Yes ①

No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist 1

Insurance carrier 2

OSHA consultant 3

Other (specify) _____ 4

Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

- Industrial area ①
- Urban area 2
- Residential area 3
- Agricultural area 4
- Rural area 5
- Adjacent to a park or a recreational area 6
- Within 1 mile of a navigable waterway 7
- Within 1 mile of a school, university, hospital, or nursing home facility ⑧
- Within 1 mile of a non-navigable waterway ⑨
- Other (specify) _____ 10

Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude 41 ° 53 ' 07 "

Longitude 88 ° 15 ' 33 "

UTM coordinates Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation inches/year

Predominant wind direction

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of CBI Y, N, and NA.)

On-Site Activity	Environmental Release		
	Air	Water	Land
Manufacturing	NA	NA	NA
Importing	NA	NA	NA
Processing	Y	N	N
Otherwise used	NA	NA	NA
Product or residual storage	Y	N	N
Disposal	NA	NA	NA
Transport	NA	NA	NA

Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

Quantity discharged to the air	<u>10.21</u>	kg/yr ± <u>10</u> %
Quantity discharged in wastewaters	<u>NA</u>	kg/yr ± <u> </u> %
Quantity managed as other waste in on-site treatment, storage, or disposal units	<u>NA</u>	kg/yr ± <u> </u> %
Quantity managed as other waste in off-site treatment, storage, or disposal units	<u>NA</u>	kg/yr ± <u> </u> %

Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
7AA	None	NA
7BB-7EE	None	NA
8A	None	NA

Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Point Source
ID Code

Description of Emission Point Source

7BB-7EE

Vent Fans

Mark (X) this box if you attach a continuation sheet.

Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics -- Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

<input type="checkbox"/> Point Source ID Code	Physical State ¹	Average Emissions (kg/day)	Frequency ² (days/yr)	Duration ³ (min/day)	Average Emission Factor ⁴	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)
A11	V	0.048	215	80	NA	UK	UK	UK

¹Use the following codes to designate physical state at the point of release:
 G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

²Frequency of emission at any level of emission

³Duration of emission at any level of emission

⁴Average Emission Factor -- Provide estimated (± 25 percent) emission factor (kg of emission per kg of production of listed substance)

10.11 Stack Parameters -- Identify the stack parameters for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

Point Source ID Code	Stack Height(m)	Stack Inner Diameter (at outlet) (m)	Exhaust Temperature (°C)	Emission Exit Velocity (m/sec)	Building Height(m) ¹	Building Width(m) ²	Vent Type ³
7BB	2.1	1.2X.46	25	232	7	46	V
7CC	2.1	1.2X.46	25	212	7	46	V
7DD	2.1	1.2X.46	25	202	7	46	V
7EE	2.1	1.2X.46	25	285	7	46	V

¹Height of attached or adjacent building

²Width of attached or adjacent building

³Use the following codes to designate vent type:

- H = Horizontal
- V = Vertical

Mark (X) this box if you attach a continuation sheet.

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

Point source ID code NA

Size Range (microns)

Mass Fraction (% ± % precision)

- < 1
- ≥ 1 to < 10
- ≥ 10 to < 30
- ≥ 30 to < 50
- ≥ 50 to < 100
- ≥ 100 to < 500
- ≥ 500

Total = 100%

Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine
 Percentage of time per year that the listed substance is exposed to this process type 100 %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					
	Less than 5%	5-10%	11-25%	26-75%	76-99%	Greater than 99%
Pump seals ¹						
Packed	NA	NA	NA	NA	NA	NA
Mechanical	NA	NA	NA	NA	NA	NA
Double mechanical ²	NA	NA	NA	NA	NA	NA
Compressor seals ¹	NA	NA	NA	NA	NA	NA
Flanges	NA	NA	NA	NA	NA	NA
Valves						
Gas ³	NA	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	6	NA	4
Pressure relief devices ⁴ (Gas or vapor only)	3	NA	NA	3	NA	NA
Sample connections						
Gas	NA	NA	NA	NA	NA	NA
Liquid	1	NA	NA	NA	NA	NA
Open-ended lines ⁵ (e.g., purge, vent)						
Gas	NA	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA	NA

¹List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

²If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

³Conditions existing in the valve during normal operation

⁴Report all pressure relief devices in service, including those equipped with control devices

⁵Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

a. Number of Pressure Relief Devices	b. Percent Chemical in Vessel ¹	c. Control Device	d. Estimated Control Efficiency ²
3	100	breather valve	UK
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

¹Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

²The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions

Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

Equipment Type	Leak Detection Concentration (ppm or mg/m ³) Measured at * Inches from Source	Detection Device ¹	Slabstock Machine		
			Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
Process type Flexible Polyurethane Foam					
Pump seals					
Packed	NA	NA	NA	NA	NA
Mechanical	NA	NA	NA	NA	NA
Double mechanical	NA	NA	NA	NA	NA
Compressor seals	NA	NA	NA	NA	NA
Flanges	NA	NA	NA	NA	NA
Valves					
Gas	NA	NA	NA	NA	NA
Liquid	*.02PPM	FPM	continuous	1	3
Pressure relief devices (gas or vapor only)	vented to outside	NA	NA	NA	NA
Sample connections					
Gas	NA	NA	NA	NA	NA
Liquid	*.02PPM	FPM	continuous	1	3
Open-ended lines					
Gas	NA	NA	NA	NA	NA
Liquid	NA	NA	NA	NA	NA

¹Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

O = Other (specify) _____

*.02PPM tank room monitor alarm enclosed area.

Mark (X) this box if you attach a continuation sheet.

Mark (X) this box if you attach a continuation sheet.

10.16 Raw Material, Intermediate and Product Storage Emissions -- Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

Vessel Type ¹	Floating Roof ² Seals	Composition of Stored Materials ³	Throughput (liters per year)	Vessel Filling Rate (gpm)	Vessel Filling Duration (min)	Vessel Inner Diameter (m)	Vessel Length (m)	Operating Vessel Volume (l)	Vessel Emission Controls ⁴	Design Flow Rate ⁵	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate ⁶
H	NA	100	246970	50	110	2.43	4.88	22710	*Breather	>30M	6.9	UK	

¹Use the following codes to designate vessel type:

- F = Fixed roof
- CIF = Contact internal floating roof
- NCIF = Noncontact internal floating roof
- EFR = External floating roof
- P = Pressure vessel (indicate pressure rating)
- H = Horizontal
- U = Underground

²Use the following codes to designate floating roof seals:

- MS1 = Mechanical shoe, primary
- MS2 = Shoe-mounted secondary
- MS2R = Rim-mounted, secondary
- LM1 = Liquid-mounted resilient filled seal, primary
- LM2 = Rim-mounted shield
- LMW = Weather shield
- VM1 = Vapor mounted resilient filled seal, primary
- VM2 = Rim-mounted secondary
- VMW = Weather shield

³Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

⁴Other than floating roofs

⁵Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

⁶Use the following codes to designate basis for estimate of control efficiency:

- C = Calculations
- S = Sampling

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

<u>Release</u>	<u>Date Started</u>	<u>Time (am/pm)</u>	<u>Date Stopped</u>	<u>Time (am/pm)</u>
1	NA	NA	NA	NA
2				
3				
4				
5				
6				

10.24 Specify the weather conditions at the time of each release.

<u>Release</u>	<u>Wind Speed (km/hr)</u>	<u>Wind Direction</u>	<u>Humidity (%)</u>	<u>Temperature (°C)</u>	<u>Precipitation (Y/N)</u>
1					
2					
3					
4					
5					
6					

Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

4.01 Specify the percent purity for the three major¹ technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	<u>NA</u> % purity	<u>NA</u> % purity	<u>99.9</u> % purity
Technical grade #2	_____ % purity	_____ % purity	_____ % purity
Technical grade #3	_____ % purity	_____ % purity	_____ % purity

¹Major = Greatest quantity of listed substance manufactured, imported or processed.

4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes (1)
 No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company 1
 Another source (2)

Mark (X) this box if you attach a continuation sheet. MSDS

**MATERIAL SAFETY
DATA SHEET**

BASF Corporation Chemicals Division
100 Cherry Hill Road, Parsippany, New Jersey 07054, (201) 316-3000

BASF

HMS: H4 F1 R1

Page 25 - 4.02 Page 1 of 4

PRODUCT NUMBER: 585621 LUPRANATE* T80-Type 1

SECTION I

*Registered Trademark

TRADE NAME: LUPRANATE* T80-Type 1

CHEMICAL NAME: Toluene Diisocyanate

SYNONYMS: TDI; Toluene Diisocyanate

FORMULA: CH₃C₆H₄(NCO)₂

CHEMICAL FAMILY: Aromatic Isocyanates

MOL. WGT.: 174.16

SECTION II - INGREDIENTS

COMPONENT	CAS NO.	%	PEL/TLV - SOURCE
LUPRANATE* T80-Type 1 Contains: *		100	Not established
2,4 Toluene Diisocyanate	584-84-9	80	0.005 ppm; 0.02 ppm STEL ACGIH, OSHA (Final) 0.02 ppm C OSHA (Trans)
2,6 Toluene Diisocyanate	91-08-7	20	0.005 ppm; 0.02 ppm STEL NIOSH recommendation
SARA Title III Sect. 313: Listed. All components are in TSCA inventory.			

SECTION III - PHYSICAL DATA

BOILING/MELTING POINT @760 mm Hg: 484°F/ N/A	pH: N/A
VAPOR PRESSURE mm Hg @20 C: 0.025	Vapor Density (Air=1): 6.0
SPECIFIC GRAVITY OR BULK DENSITY: 1.22	Freezing Point: 51.8-53.6°F
SOLUBILITY IN WATER: Water reacts	
APPEARANCE: Colorless liquid	ODOR: Pungent
	INTENSITY: Strong

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (TEST METHOD): 270°F TAG Open Cup	AUTOIGNITION TEMP: >620°F
FLAMMABILITY LIMITS IN AIR (% BY VOL)	LOWER: 0.9% UPPER: 9.5%
EXTINGUISHING MEDIUM	Use water fog, foam or CO2 extinguishing media.
SPECIAL FIREFIGHTING PROCEDURES	Personnel engaged in fighting isocyanate fires must be protected against nitrogen dioxide fumes as well as isocyanate vapors. Firefighters must wear self-contained breathing apparatus and turnout gear.
UNUSUAL FIRE AND EXPLOSION HAZARDS	Avoid water contamination in closed containers or confined areas; carbon dioxide gas is generated.

EMERGENCY TELEPHONE NUMBER

CHEMTREC 800-424-9300

201-316-3000

THIS NUMBER IS AVAILABLE DAYS, NIGHTS, WEEKENDS, AND HOLIDAYS

SECTION V - HEALTH DATA

TOXICOLOGICAL TEST DATA:

LUPRANATE* T80-Type 1

2,4 Toluene Diisocyanate

Rat, Oral LD50

Mouse, Inhalation LC50

RESULT:

Severe eye and skin irritant, sensitizer
5.8 g/kg.
10 ppm/4H

EFFECTS OF OVEREXPOSURE:

The primary routes of exposure to this material are eye or skin contact, and inhalation. Contact with the liquid can cause skin and eye burns. The vapors are irritating to the eyes and respiratory tract. Overexposure may cause pulmonary edema. Pulmonary sensitization can occur in some individuals, leading to asthma-type spasms of the bronchial tubes and difficulty breathing. Anyone having a history of respiratory illness, asthmatic conditions, eye damage, or TDI sensitization should avoid any exposure to TDI. TDI was carcinogenic to rats and mice in a NTP bioassay; however, it was not carcinogenic to rats in a lifetime inhalation study. TDI is listed in the National Toxicology Program (NTP) Fourth Annual Report on Carcinogens, and the International Agency for Research (IARC) concluded that there is sufficient evidence that TDI is carcinogenic in animals.
Existing medical conditions aggravated by exposure to this material:
Pulmonary disorders.

FIRST AID PROCEDURES:

Existing medical conditions aggravated by exposure to this material:
Pulmonary disorders.

Eyes-Immediately wash eyes with running water for 15 minutes.
Get immediate medical attention.

Skin-Wash affected areas with water while removing contaminated clothing. Get immediate medical attention. Launder contaminated clothing before reuse.

Ingestion-If swallowed, DO NOT INDUCE VOMITING. Dilute with water or milk and get immediate medical attention. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.

Inhalation-Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

SECTION VI - REACTIVITY DATA

STABILITY:

Stable.

CONDITIONS TO AVOID:

Avoid temperatures >40°C for extended periods of time.

CHEMICAL INCOMPATIBILITY:

Water, basic compounds, alcohols, acids, amines.

HAZARDOUS DECOMPOSITION PRODUCTS:

TDI vapors, NOx, CO and HCN.

HAZARDOUS POLYMERIZATION:

May occur.

Avoid contamination with moisture and other products that react with isocyanates.

CONDITIONS TO AVOID:

CORROSIVE TO METAL:

No

OXIDIZER:

No

SECTION VII - SPECIAL PROTECTION

RESPIRATORY PROTECTION:

NIOSH/MSHA approved respiratory equipment for transfer operations or escape. Self-contained breathing apparatus if the P.E.L. is exceeded, or in confined areas or if a leak occurs.

EYE PROTECTION:

Wear fitted goggles or face shield and safety glasses.

PROTECTIVE CLOTHING:

Rubber gloves, coveralls, boots and rubber apron which must be cleaned after each use. Hardhat for head protection.

VENTILATION:

Use local exhaust wherever vapors are generated.

OTHER:

Maintain work area below P.E.L. Vented vapors should be scrubbed through carbon filters or other similarly effective medias.

SECTION VIII - ENVIRONMENTAL DATA

ENVIRONMENTAL TOXICITY DATA:

Aquatic toxicity rating: T_{lm} 96: 10 ppm - 1 ppm.

SPILL AND LEAK PROCEDURES:

LUPRANATE* T80 is a RCRA-regulated product. Wear protective clothing, evacuate all not involved in the cleanup. For minor spills, absorb with absorbent and containerize into open top drums. Decontaminate spill area with a mixture of 90% water, 8% concentrated ammonia and 2% detergent.

HAZARDOUS SUBSTANCE SUPERFUND: Yes RQ (lbs): 100

WASTE DISPOSAL METHOD:

Dispose of waste in a RCRA-permitted facility.
Incinerate or landfill in a RCRA-permitted facility.

HAZARDOUS WASTE 40CFR261: Yes HAZARDOUS WASTE NUMBER: U 223

CONTAINER DISPOSAL:

Containers should be neutralized with liquid decontaminant. Empty containers, containing less than 1" of residue, may be landfilled. If containers are not empty, they must be disposed as a hazardous waste in a RCRA-licensed facility.

SECTION IX - SHIPPING DATA

D.O.T. PROPER SHIPPING NAME (49CFR172.101-102)

Toluene Diisocyanate

HAZARDOUS SUBSTANCE (49CFR CERCLA LIST)

Yes

REPORTABLE QUANTITY (RQ) 100 lb

D.O.T. HAZARD CLASSIFICATION (CFR172.101-102)

PRIMARY
Poison B

SECONDARY

D.O.T. LABELS REQUIRED (49CFR172.101-102)

Poison

D.O.T. PLACARDS REQUIRED (CFR172.504)

BULK ONLY
Poison-2078

POISON CONSTITUENT (49CFR172.203(K))

TDI

BILL OF LADING DESCRIPTION

Toluene Diisocyanate-Poison B-UN 2078 RQ 100 lbs.
*** Placarded: POISON ***

CC NO. 190

UN/NA CODE 2078

DATE PREPARED: 4 / 17 / 86

UPDATED: 5 / 25 / 89

WHILE BASF CORPORATION BELIEVES THE DATA SET FORTH HEREIN ARE ACCURATE AS OF THE DATE HEREOF, BASF CORPORATION MAKES NO WARRANTY WITH RESPECT THERETO AND EXPRESSLY DISCLAIMS ALL LIABILITY FOR RELIANCE THEREON. SUCH DATA ARE OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION, AND VERIFICATION.

SECTION X - PRODUCT LABEL**LUPRANATE* T80-Type 1****DANGER: POISON****HARMFUL IF INHALED.**

CONTACT WITH EYES AND SKIN RESULTS IN SERIOUS BURNS. INHALATION OF VAPORS CAUSES SEVERE IRRITATION TO LUNGS. PULMONARY EDEMA MAY OCCUR. PULMONARY SENSITIZATION CAN OCCUR IN SOME INDIVIDUALS, LEADING TO ASTHMA-TYPE SPASMS OF THE BRONCHIAL TUBES AND DIFFICULTY IN BREATHING. INDIVIDUALS WITH A HISTORY OF RESPIRATORY ILLNESS, ASTHMATIC CONDITIONS, EYE DAMAGE OR TDI SENSITIZATION SHOULD NOT BE EXPOSED TO THIS PRODUCT.

IN AN NTP STUDY, TDI WAS CARCINOGENIC TO RODENTS GIVEN HIGH ORAL DOSES AND IS INCLUDED IN THE NTP ANNUAL REPORT ON CARCINOGENS. TDI WAS NOT CARCINOGENIC TO RATS IN A TWO-YEAR INHALATION STUDY.

Use with local exhaust. Wear an approved respirator or self-contained breathing apparatus, fitted goggles or face shield and safety glasses, rubber gloves, coveralls, boots, apron and other protective clothing as necessary to prevent contact.

FIRST AID:

Eyes-Immediately wash eyes with running water for 15 minutes. Get immediate medical attention.

Skin-Wash affected areas with water while removing contaminated clothing. Get immediate medical attention. Launder contaminated clothing before reuse.

Ingestion-If swallowed, DO NOT INDUCE VOMITING. Dilute with water or milk and get immediate medical attention. Never give fluids or induce vomiting if the victim is unconscious or having convulsions.

Inhalation-Move to fresh air. Aid in breathing, if necessary, and get immediate medical attention.

HANDLING AND STORAGE: Keep containers closed and store in a well-ventilated place. Outage of container should be filled with dry inert gas at atmospheric pressure to avoid reaction with moisture. Contamination by moisture or basic compounds can cause dangerous pressure buildup in closed container. Store above 60 F to prevent freezing and isomer separation. If solidified, do not exceed 95 F while thawing, to prevent discoloration. Mix before using.

IN CASE OF SPILLS OR LEAKS: Material is a RCRA-regulated product. Spills should be contained, absorbed and placed in suitable containers for disposal in a RCRA-licensed facility.

IN CASE OF FIRE: Use water fog, foam or CO2 extinguishing media. Firefighters should be equipped with self-contained breathing apparatus and turnout gear for protection against TDI vapors and toxic decomposition products.

EMPTY CONTAINERS: All labeled precautions must be observed when handling, storing and transporting empty containers due to product residues. Do not reuse this container unless it is professionally cleaned and reconditioned.

DISPOSAL: Spilled material, unused contents and empty containers must be disposed of in accordance with local, state and federal regulations. Refer to our Material Safety Data Sheet for specific disposal instructions.

IN CASE OF CHEMICAL EMERGENCY: Call CHEMTREC day or night for assistance and information concerning spilled material, fire, exposure and other chemical accidents 800-424-9300.

ATTENTION: This product is sold solely for use by industrial institutions. Refer to our Technical Bulletin and Material Safety Data Sheet regarding safety, usage, applications, hazards, procedures and disposal of this product. Consult your supervisor for additional information.

FOR INDUSTRY USE ONLY.

CAS No.: 584-84-9; 91-08-7.

Proper Shipping Name: Toluene Diisocyanate, Poison B - UN 2078 RQ

Made in USA.

Polymers

0488

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Stabstock Machine

Work area -1-

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
A	2	Direct skin contact inhalation	OL, GU	A	30
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

- A = 15 minutes or less
- B = Greater than 15 minutes, but not exceeding 1 hour
- C = Greater than one hour, but not exceeding 2 hours
- D = Greater than 2 hours, but not exceeding 4 hours
- E = Greater than 4 hours, but not exceeding 8 hours
- F = Greater than 8 hours

Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area -2-

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
A	2	direct skin contact inhalation	OL, GU	C	215
E	1	direct skin contact inhalation	OL, GU	C	215
F	1	direct skin contact inhalation	OL, GU	C	215

¹Use the following codes to designate the physical state of the listed substance at the point of exposure:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

²Use the following codes to designate average length of exposure per day:

- A = 15 minutes or less
- B = Greater than 15 minutes, but not exceeding 1 hour
- C = Greater than one hour, but not exceeding 2 hours
- D = Greater than 2 hours, but not exceeding 4 hours
- E = Greater than 4 hours, but not exceeding 8 hours
- F = Greater than 8 hours

Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area Tank car, truck offloading -1-

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>Y</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>Y</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
_____	_____
_____	_____

Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to reduce or eliminate their exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area Compounding, mixhead..... -2-

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>Y</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>Y</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>N</u>
Other (specify)	
_____	_____
_____	_____

Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area -2-

Placarding, limited access, respiratory protection, eye protection, training program.

9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Flexible Polyurethane Foam Slabstock Machine

Work area -2-

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Vacuuming	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Water flushing of floors	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>
Other (specify)				
* _____	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>

*not routine, would flush with neutralizer after control & containment.

Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

Process type Flexible Polyurethane Foam Slabstock Machine

Work area -3-

Placarding, limited access, respiratory protection, training program.

9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Flexible Polyurethane Foam Slabstock Machine

Work area -3-

<u>Housekeeping Tasks</u>	<u>Less Than Once Per Day</u>	<u>1-2 Times Per Day</u>	<u>3-4 Times Per Day</u>	<u>More Than 4 Times Per Day</u>
Sweeping	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Vacuuming	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Water flushing of floors	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
Other (specify)				
<u>NA</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

Mark (X) this box if you attach a continuation sheet.

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